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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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DUKE W. YEE YEE & ASSOCIATES, P.C. P.O. BOX 802333 DALLAS, TX 75380			EXAMINER ZHE, MENG YAO	
			ART UNIT 2195	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/658,726

Applicant(s)

BUCO ET AL.

Examiner

MengYao Zhe

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 June 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-11,13,14 and 17-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 4-11, 13, 14, and 17-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1, 4-11, 13, 14, and 17-24 are presented for examination.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 14, 17-24 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

- i) Claims 14, 17-24 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claims are directed to a signal directly or indirectly by claiming a medium and the Specification recites evidence where the computer readable medium is define as a "wave" (such as radio frequency and light wave). In that event, the claims are directed to a form of energy which at present the office feels does not fall into a category of invention. The following link on the World Wide Web is for the United States Patent And Trademark Office (USPTO) policy on 35 U.S.C. §101.

http://www.uspto.gov/web/offices/pac/dapp/opla/preognotice/guidelines101_20051026.pdf

Double Patenting

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

5. A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

6. Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claim 1 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-3 of Patent Application No. 11/767891 (hereafter 11/767891) in view of Hamidzadeh, Atif, and Ramamritham, Copy Right, 1999 (hereafter Atif). Claim 14 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 14-16 of 11/767891 in view of Atif.

8. As per claim 1 of this application and claim 1-3 of 11/767891, they both comprise substantially the same method steps.

9. The only difference between this application and 11/767891 is that claim 3 of 11/767891 merely teaches allocating thinking time into separate thinking time partitions for predictable potential next events. 11/767891 does not specifically teach allocating thinking time into separate thinking time partitions within each time slot for each problem instance of a plurality of the predictable potential next events, wherein an optimal amount of think time is calculated for each problem instance of the plurality of the predictable potential next events.

However, Atif teaches allocating thinking time into separate thinking time partitions within each time slot for each problem instance of a plurality of the predictable potential next events, wherein an optimal amount of think time is calculated for each problem instance of the plurality of the predictable potential next events (Fig 3; Pg 283, lines 16-19, lines 32-35; Section 3.2 Scheduling Phase, lines 1-7; Section 3.4 Allocation

and Control of Scheduling Time, lines 1-11; Fig 3) for the purpose of allocating an optimal time frame for running a scheduler;

Therefore, it would have been obvious to one of an ordinary skill in the art at the time the invention was made to have combined the teaching of 11/767891 and Atif, because it allows for allocating an optimal time frame for running a scheduler.

10. Claim 14 is rejected for the same reasoning as above.

Claim Rejections - 35 USC § 112

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. Claims 1, 4-11, 13, 14, and 17-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A. The following claim languages are unclear and indefinite:

i) Claim 1, lines 5-6, it is unclear what it means to "continually assigning tasks and start times" < i.e. is it continually assigning start times of tasks? Does it keep on changing the start time of one particular task before its actual start time? Or does it continually assigning start times for

all new incoming tasks?> Moreover, it is uncertain as to how "continually assigning tasks and start times based on predictable potential next events" can help to minimize expected penalties < i.e. what is the predicted next event? Is it predicting the end time of the current executing task, and using this to minimize the penalties of all the tasks that follow this current executing task?>.

line 7, it is unclear how a "time slot" and "time partitions" are defined < i.e. is a time slot defined by the user? Or by the predicted start time and the end time of a task and thus the length of a time slot may vary dynamically? How is a time partition defined? By the user as well?>. Moreover, is it unclear to whom the "thinking time" is assigned < i.e. is the thinking time assigned to the task? The processing system in line 1? Or a scheduler that is part of the processing system?>.

line 8, it is unclear what "an optimal amount of think time" is < i.e. it is optimal compared to what? What criteria define whether it is optimal or not?>.

line 9, It is unclear how "think time" is related to "thinking time" of line 7 <i.e. are they the same thing? If so, consistent name should be used.>. It is unclear what "each problem instance" is < i.e. what is the problem that the system is trying to solve? Is it a problem of predicting the potential next event?>

lines 10-11: it is uncertain as to how "resources for a predicted next event" may be allocated "during each allocated thinking time partition" < i.e. if the thinking time is used to predict when a next event may occur, how can resources be already allocated to the next event if the system has not completed its prediction?>.

It is unclear how "allocating resources" in line 10 is different from "assigning resources" in line 12 < i.e. does allocating resources mean that the system has specifically set aside a certain amount of resources for a task so that no other tasks may use it, but the task that the resources is used for is not to be touched by that task? Does assigning resources mean that the resources that had been set aside may now be actually touched and used by the task that it is suppose to service for?>

Claims 13 and 14 have the same deficiencies as claim 1 above.

ii) Claim 4, line 3, it is unclear what "an initial algorithm" is <i.e. is it merely any type of algorithm that is being run the first time during each time slot?>.

line 4, it is unclear what "a randomized algorithm" is <i.e. there are a lot of algorithms that embodies some aspect of randomization, what specific algorithm is this? Is there an equation?>

Claim 17 have the same deficiencies as claim 4 above.

Claim Rejections - 35 USC § 102

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

14. Claims 1, 13 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by To Schedule of to Execute: Decision Support and Performance Implications, by Hamidzadeh, Atif, and Ramamritham, Copy Right, 1999 (hereafter Atif).

15. As per claims 1,13, and 14, Atif substantially teaches the invention as claimed including a method, in a data processing system, for resource allocation of a plurality of tasks carrying penalties based on their completion time, the method comprising:

assigning the plurality tasks to one or more resources; (Pg 155, Section 1, Introduction, lines 1-2; Pg 159, lines 9-11)

assigning start times for the plurality of tasks such that expected penalties for completion times of the plurality of tasks are minimized, wherein expected penalties are minimized by continually assigning tasks and start times based on predictable potential next events (Pg 158, section 2, lines 1-10);

allocating thinking time into separate thinking time partitions within each time slot for each problem instance of a plurality of the predictable potential next events, wherein an optimal amount of think time is calculated for each problem instance of the plurality

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of the predictable potential next events (Fig 3; Pg 283, lines 16-19, lines 32-35; Section 3.2 Scheduling Phase, lines 1-7; Section 3.4 Allocation and Control of Scheduling Time, lines 1-11; Fig 3);

during each allocated thinking time partition, allocating resources for a predicted next event at a predicted time at which the predicted next event may occur (Pg 155, Section 1, lines 1-2; Pg 283, lines 3-5; Pg 285, lines 9-20);

assigning resources for queued tasks based upon an actual next event and an actual time of occurrence (Pg 159, Table 1: asi and aei; Pg 285, lines 9-20).

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claims 4-11, 17-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over To Schedule of to Execute: Decision Support and Performance Implications, by Hamidzadeh, Atif, and Ramamritham, Copy Right, 1999 (hereafter Atif) in view of Baker et al. Pub. No. US 2005/0065826, 3/24/2005 (hereafter Baker).

18. Baker et al. was cited in the last office action.

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19. As per claims 4 and 17, Atif teaches wherein the step of allocating thinking time includes

reserving a first amount of time for performing an initial iteration of a scheduling phase (Pg 164, section 3.2, lines 18-23)

allocating a second amount of time for performing a backtrack algorithm (Pg 164, section 3.2, lines 25-27).

Aitif does not specifically teach an initial algorithm and a randomized algorithm.

However, Baker teaches an initial algorithm (Abstract, lines 9-10) and randomized algorithm (Para 52, lines 16-22, lines 41-43) for the purpose of having two different algorithms to use to optimize job scheduling.

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention to modify the invention of Atif with reserving a first amount of time for performing an initial algorithm and allocating a second amount of time for performing a randomized algorithm, as taught by Baker, because it allows the system to have two different algorithms to use to optimize job scheduling.

20. As per claims 5 and 18, Atif teaches repeatedly executing the backtrack algorithm until an event occurs or the second amount of time expires (Pg 164, section 3.2, lines 24-27; Pg 165, lines 1-3).

Baker teaches wherein the step of allocating resources for a predicted next event at a predicted time at which the predicted next event may occur includes: executing the initial algorithm to form a preliminary solution; and repeatedly executing the randomized

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algorithm until an event occurs or the second amount of time expires. (*Baker, Para 52, lines 1-3, lines 16-22, 34-43*)

Baker is silent to the recording of a seed value of zero to indicate the current solution as a preliminary solution.

However, to record a value zero as a mere indicator of a starting point would have been obvious to one of ordinary skill in the computer programming art as it is recognized in the art to use any type of indicator to signify a starting point, as long as it is recognized by the system itself based on its protocol.

21. As per claims 6 and 19, Baker teaches responsive to the randomized algorithm forming a solution that is better than a previous solution, updating the seed value (*Para 52, lines 1-3*).

22. As per claims 7 and 20, Baker teaches wherein the step of assigning resources for queued tasks based upon an actual next event and an actual time of occurrence includes:

determining whether a best solution was found using the initial algorithm or the randomized algorithm; (*Para 16 and Para 17, lines 1-2*)

responsive to the best solution being found using the initial algorithm, executing the initial algorithm and assigning resources based on results of the initial algorithm for the purpose of having at least one algorithm to perform the optimization. (*Para 16 and Para 17, lines 1-2; Para 21*)

23. As per claims 8 and 21, Baker teaches responsive to the best solution being found using the randomized algorithm, executing the randomized algorithm using the seed value and assigning resources based on results of the randomized algorithm for the purpose of having at least one algorithm to perform the optimization. (*Para 16 and Para 17, lines 1-2; Para 19, lines 1-3; Para 21*)

24. As per claims 9 and 22, Baker teaches assigning only immediately starting tasks (Para 17).

25. As per claims 10 and 23, Atif teaches wherein an event is one of a job arrival, a task completion, a data change arrival, a managerial schedule request, and a termination request (Pg 158, section 2, lines 8-10).

26. As per claims 11 and 24, Atif teaches wherein a job includes one or more task (Pg 158, section 2, lines 8-10: a task corresponds to a task).

Response to Arguments

27. Applicant's argument filed on 6/15/2007 regarding to claims 1, 4-11, 13, 14, and 17-24 have been fully considered, but they are moot in view of the new ground of rejection.

Conclusion

28. Applicants' amendments necessitated the new grounds of rejection presented in this office action. Accordingly, **THIS ACTION IS MADE FINAL**. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MengYao Zhe whose telephone number is 571-272-6946. The examiner can normally be reached on Monday Through Friday, 10:00 - 8:00 EST. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached at 571-272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


MENG-AI T. AN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100